

CAD : TEAM PROJECT

MY BRO, BUMBLEBEE

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1

INTRODUCTION

1.0

팀 소개

MY BRO,

BUMBLEBEE

→ 세계적인 축구 선수 '크리스티아누 호날두'의 별명 '우리 형'
'MY BRO, BUMBLEBEE' 라는 팀명 선정

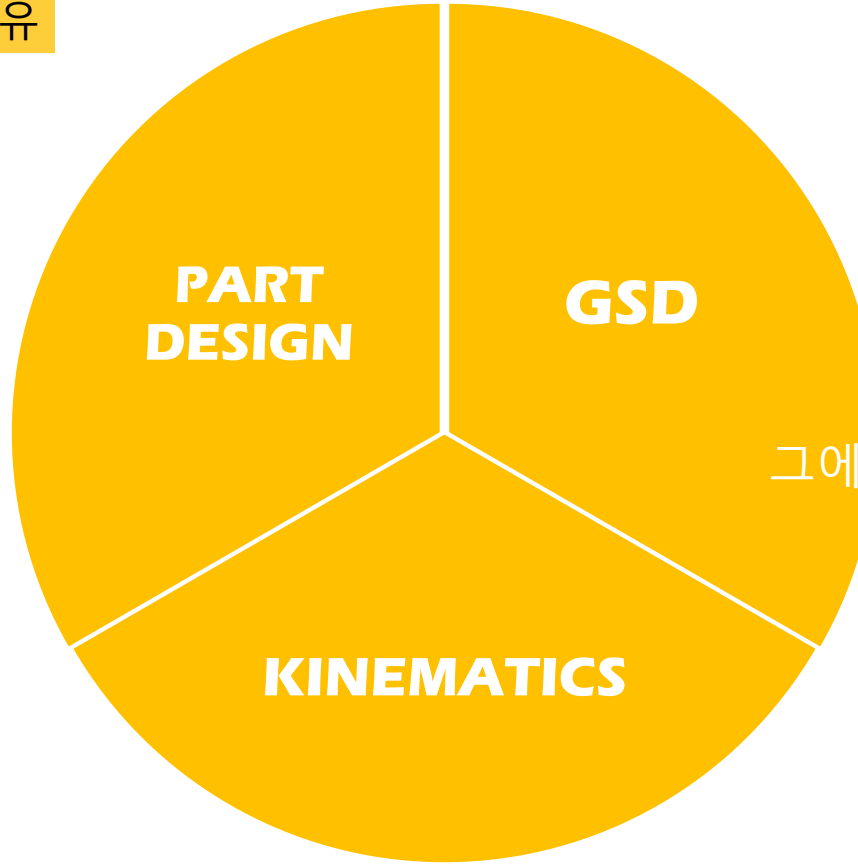
1.1

모델 선정

범블비 영상

1.2

모델 선정 이유



CAD 수업 내용을
모두 활용할 수 있는 적합한 모델

기어를 제작한 후
그에 의한 로봇의 움직임을 확인하고자 함

1.3

설계 목표

호날두 세레머니 영상

1.3

설계 목표

원하는 MODEL 제작
원하는 MOTION 구현

2

MODELING

2.0

OUTSOURCING



출처 : TFW2005.COM

2.0

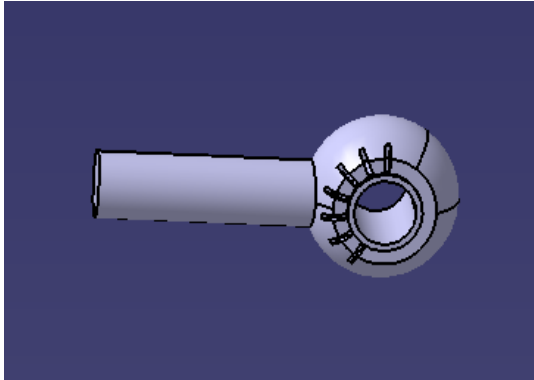
OUTSOURCING



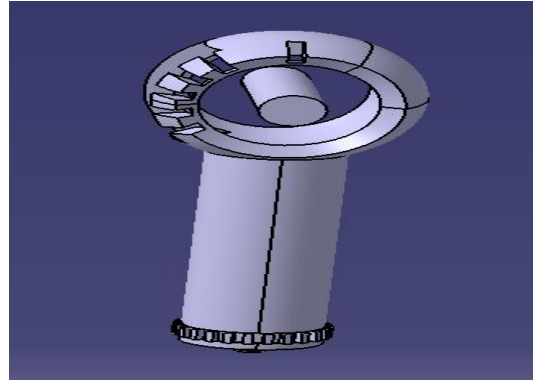
범블비 피규어

2.1

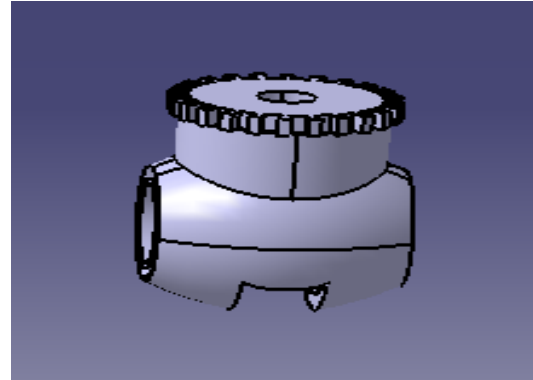
FRAME



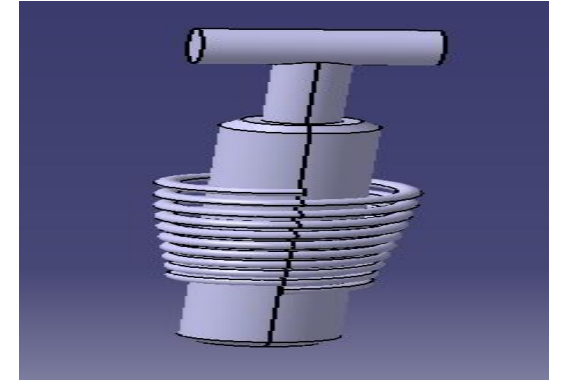
ARM JOINT 1



ARM JOINT 2



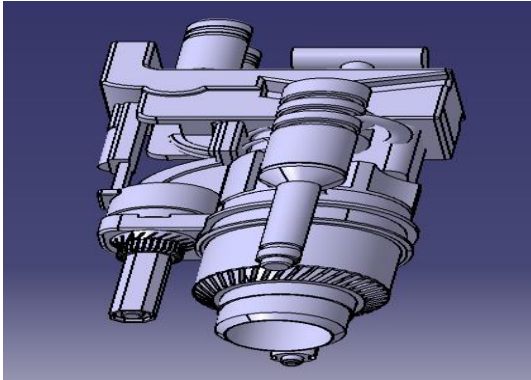
ARM JOINT 3



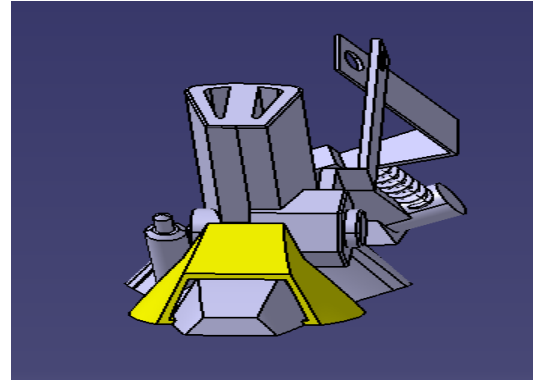
ARM JOINT 4

2.1

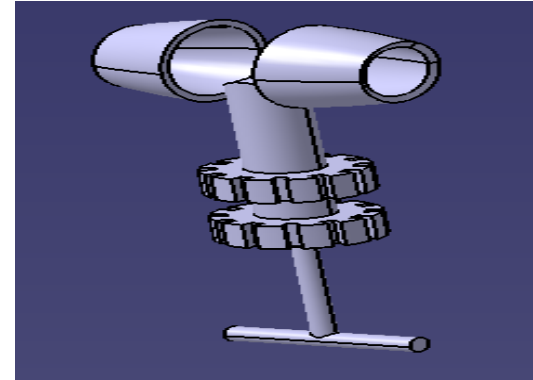
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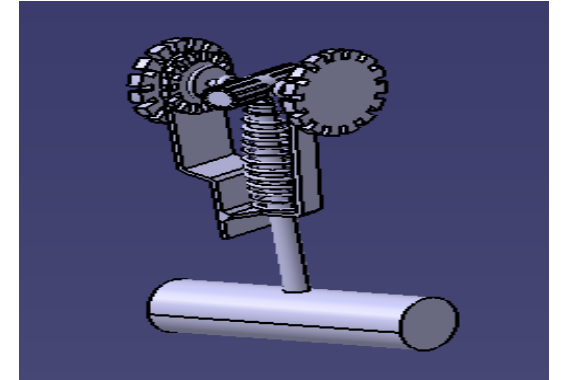
CANON



FOOT



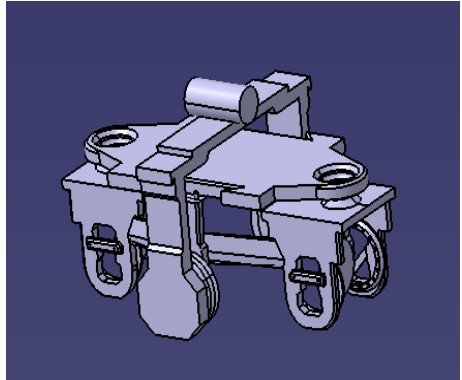
SHIN JOINT



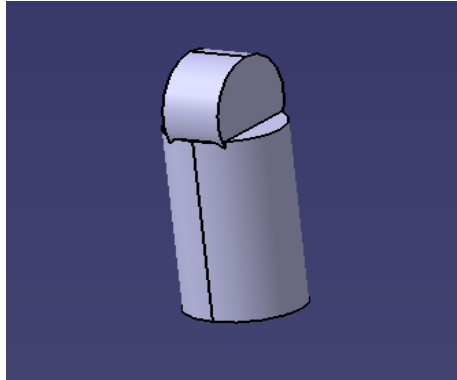
THIGH JOINT

2.1

FRAME



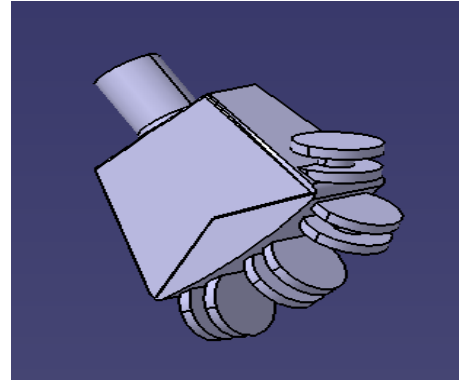
PELVIS



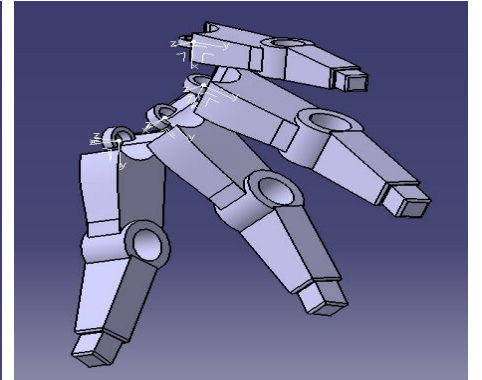
NECK



ANKLE



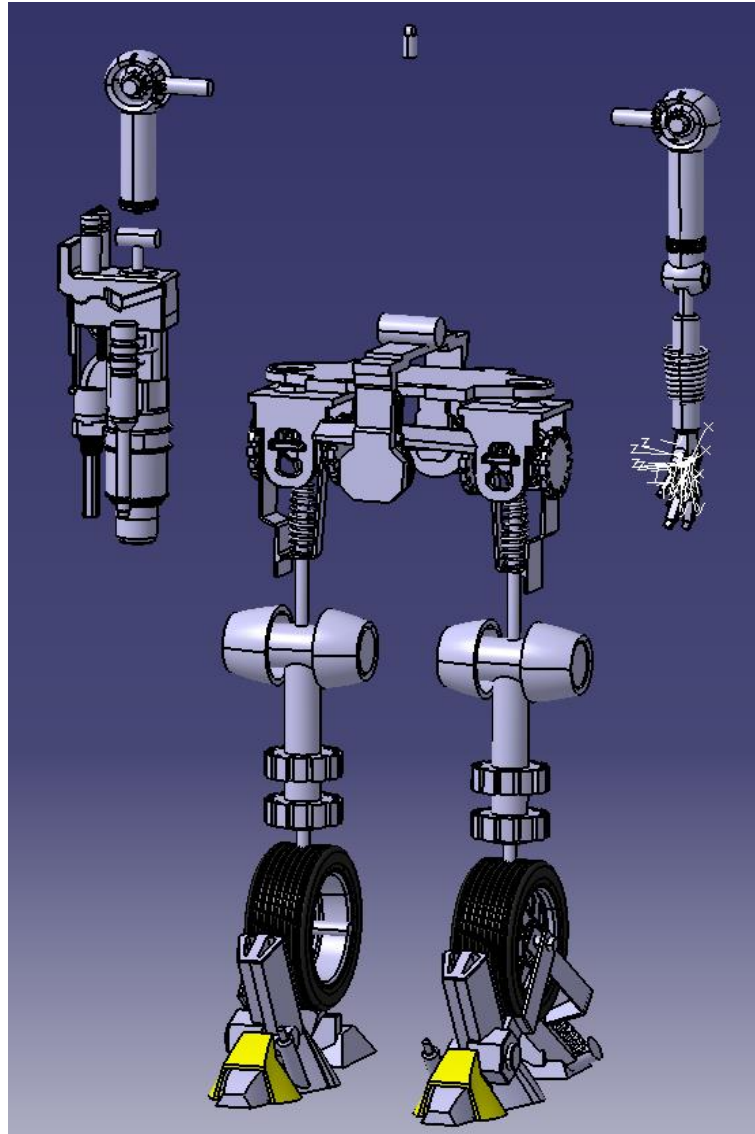
HAND



FINGER

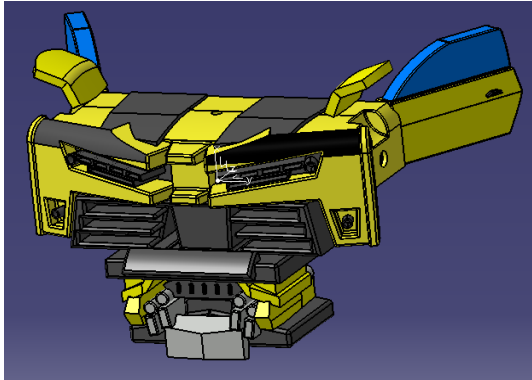
2.1

FRAME

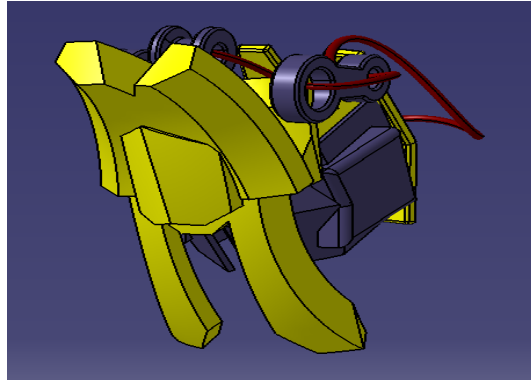


2.2

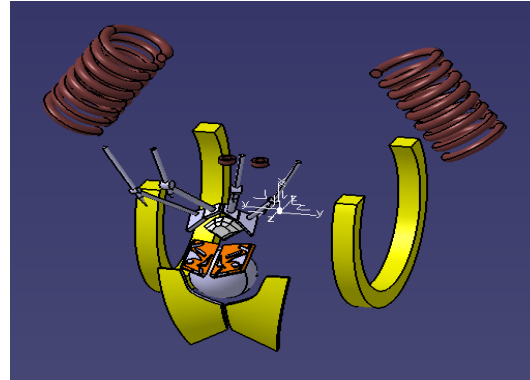
SHAPE



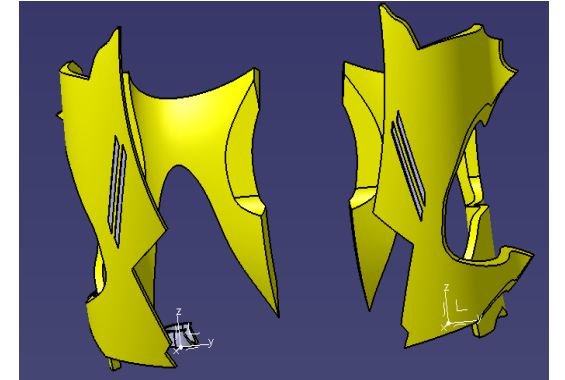
TOP BODY



SHIN COVER



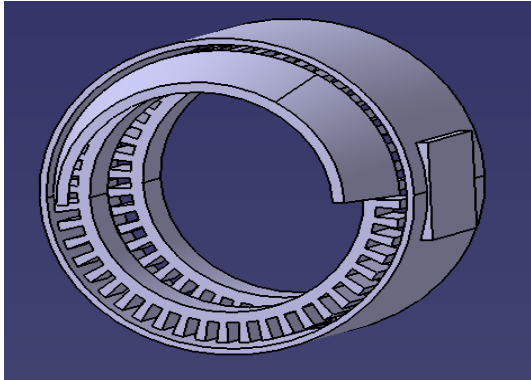
FELVIS COVER



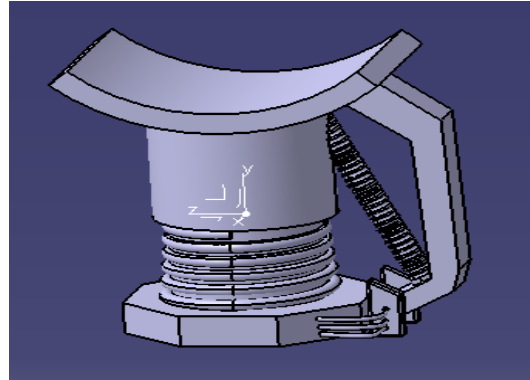
THIGH COVER

2.2

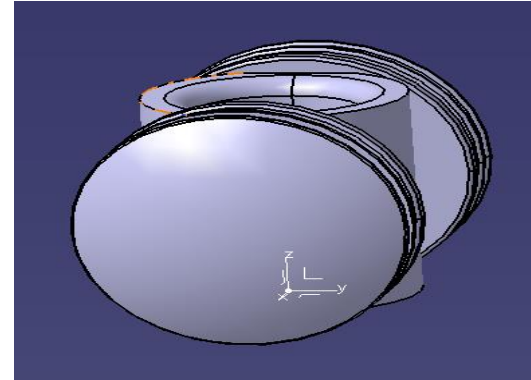
SHAPE



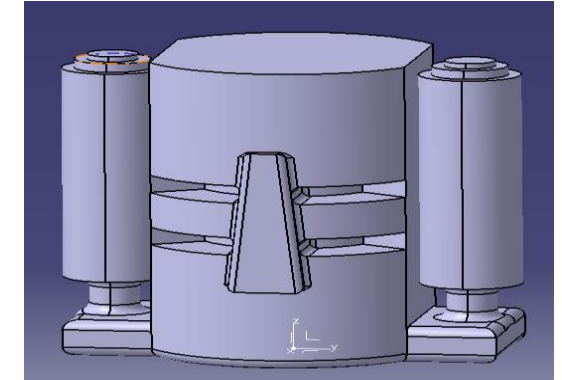
ARM COVER 1



ARM COVER 2



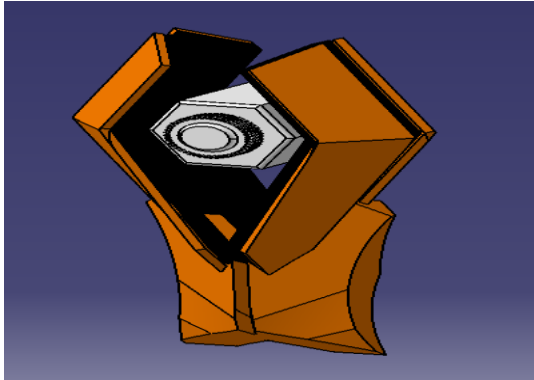
ARM COVER 3



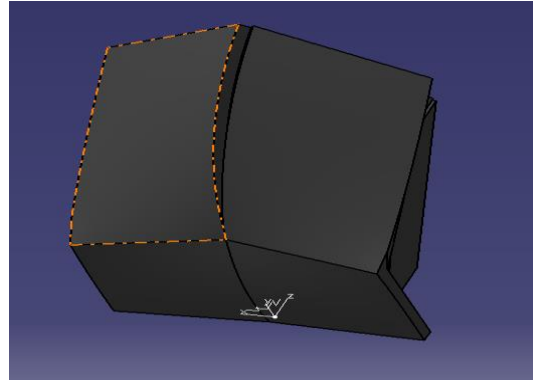
ARM COVER 4

2.2

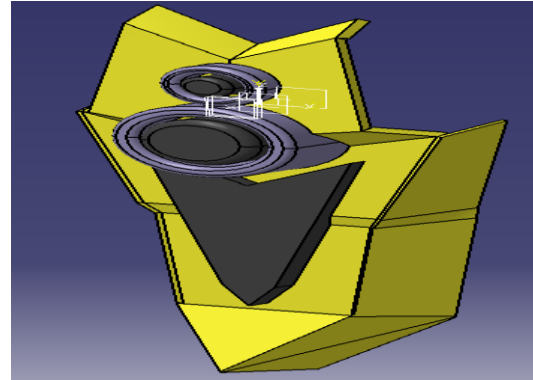
SHAPE



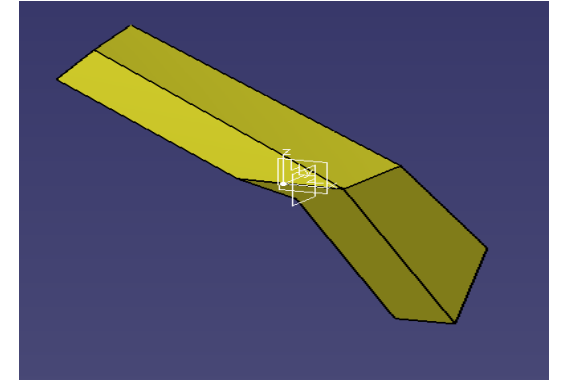
ARM COVER 5



ARM COVER 6



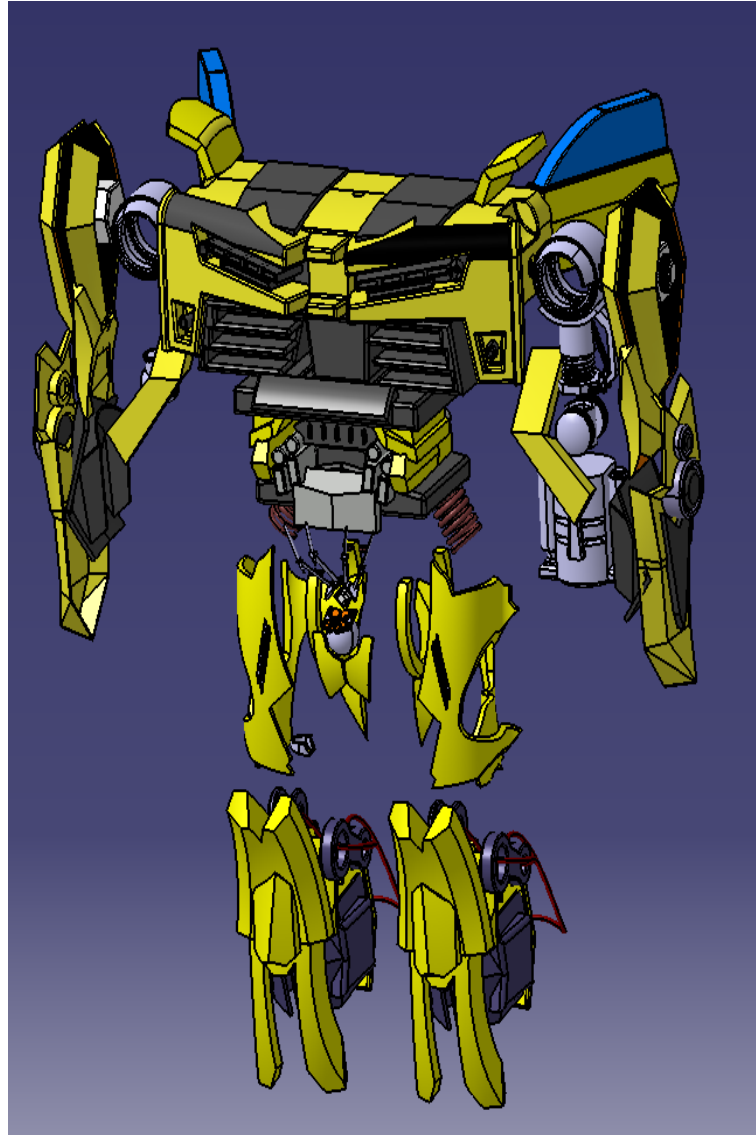
ARM COVER 7



ARM COVER 8

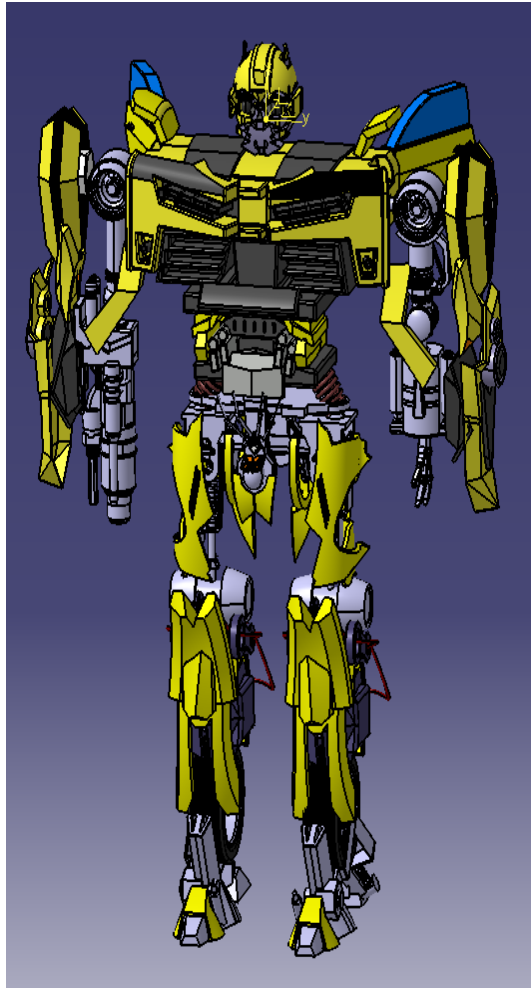
2.2

SHAPE



2.2

SHAPE

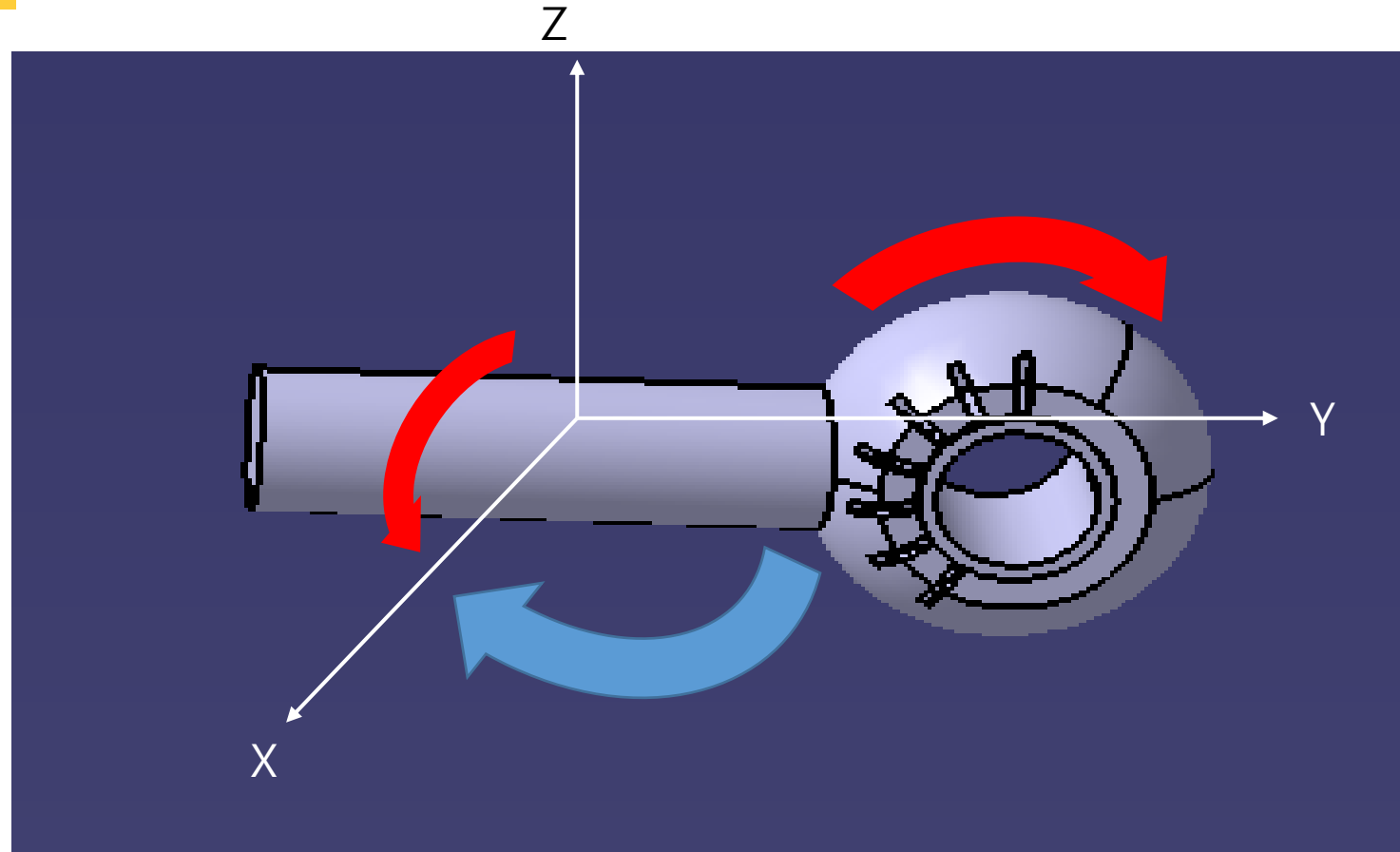


3

KINEMATIC

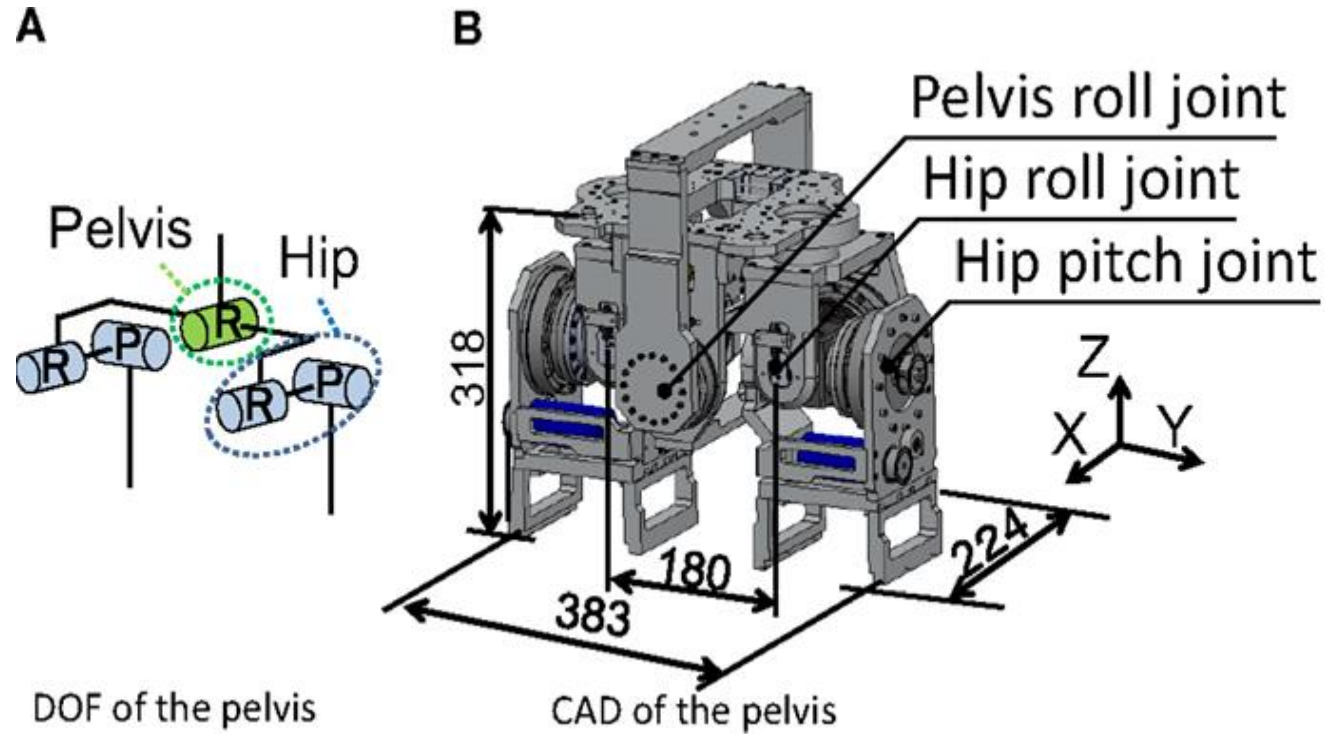
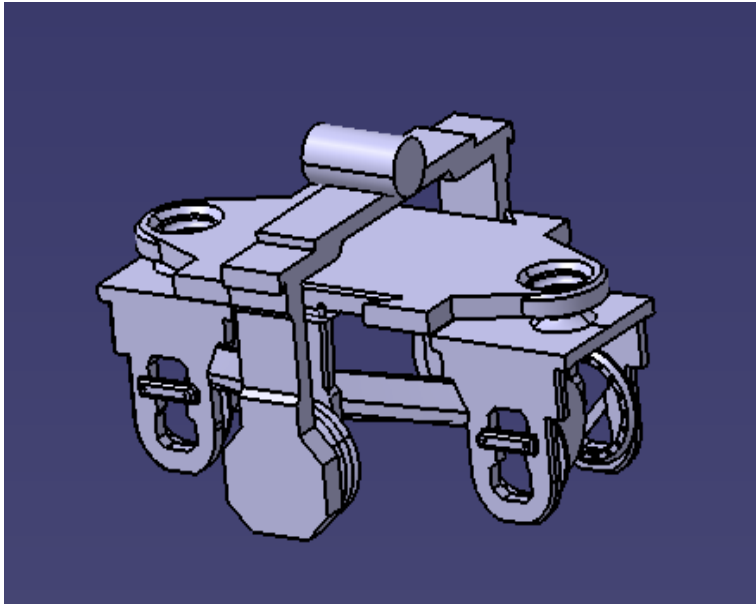
3.0

FRAME : ARM JOINT 1



3.0

FRAME : PLEVIS



Reference :

Takuya Otani, 2015, Utilization of human-like pelvic rotation for running robot, Figure 6, from frontiers website : <http://journal.frontiersin.org/article/10.3389/frobt.2015.00017/full>

3.1

PART ASSEMBLY KINEMATIC



3.1

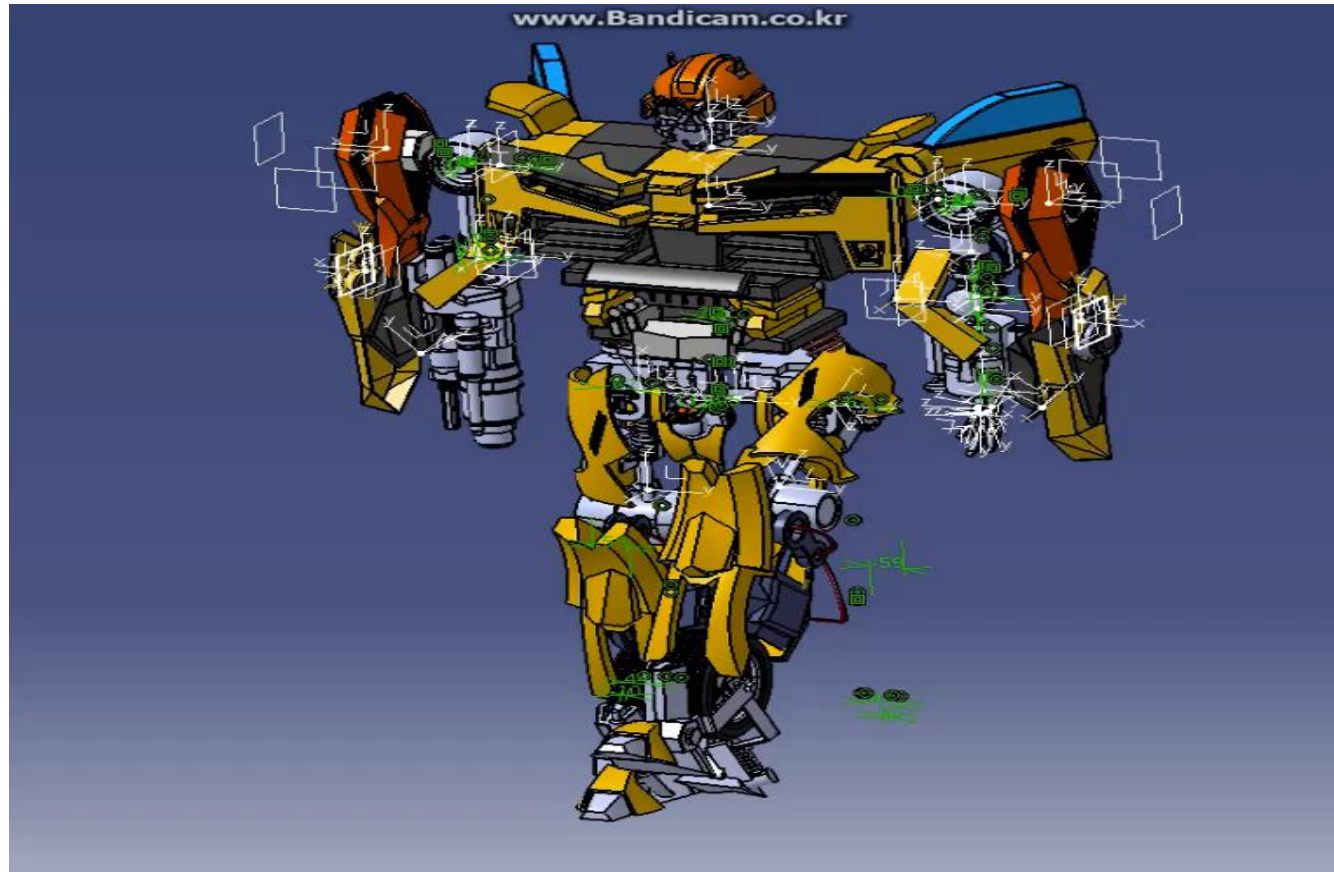
PART ASSEMBLY
KINEMATIC



골반

3.1

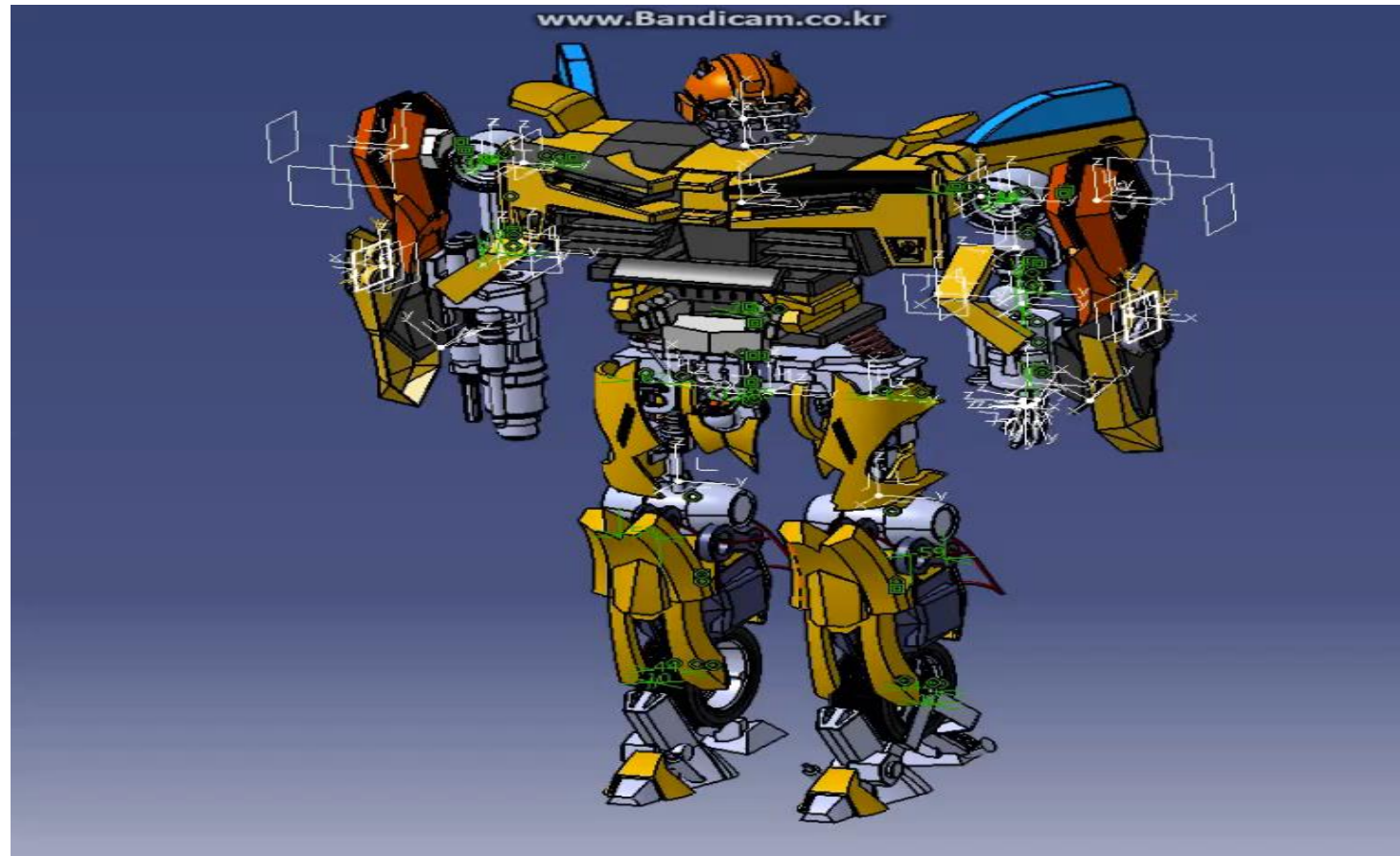
PART ASSEMBLY KINEMATIC



다리

3.1

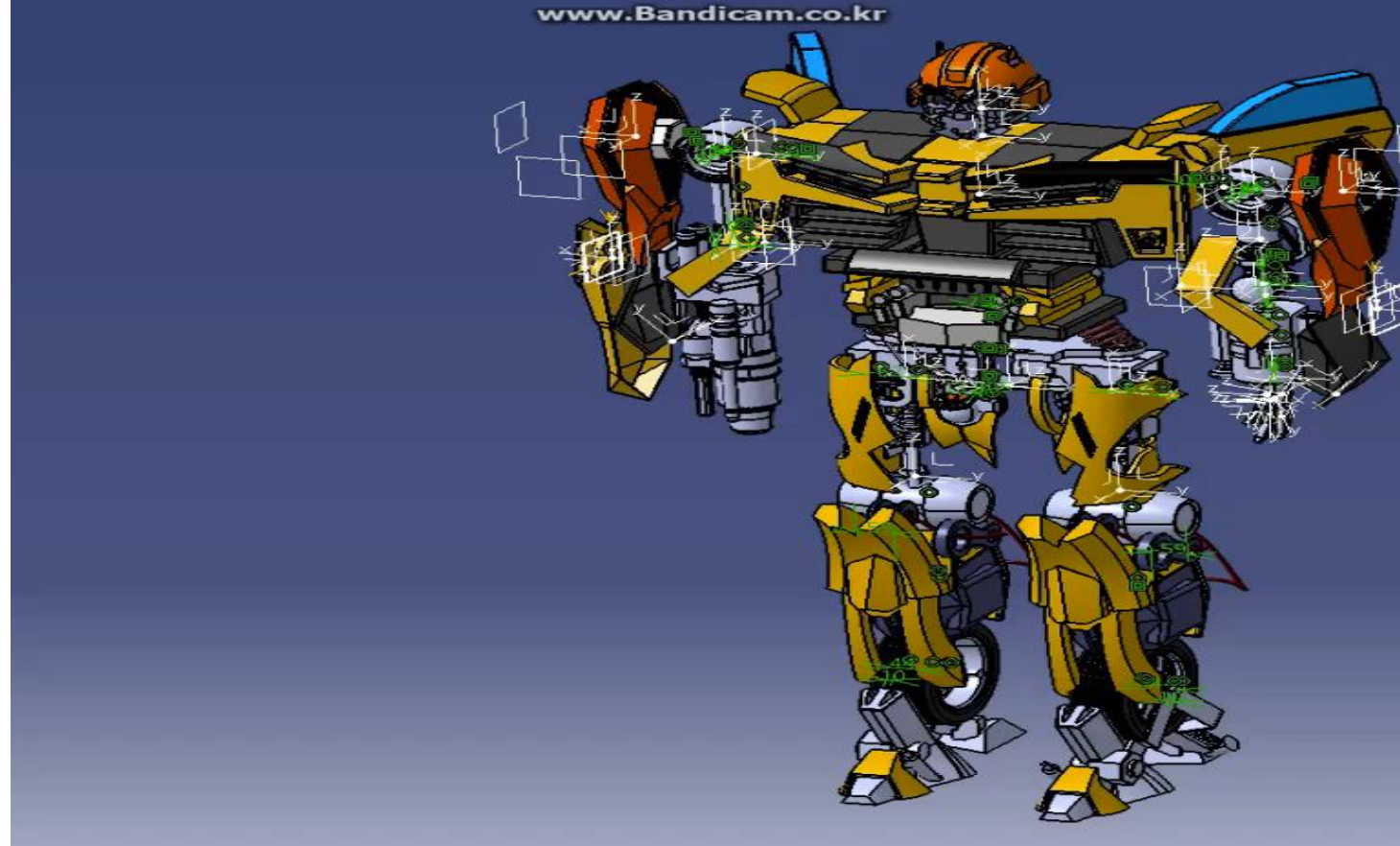
PART ASSEMBLY
KINEMATIC



머리

3.1

PART ASSEMBLY
KINEMATIC



손가락

3.1

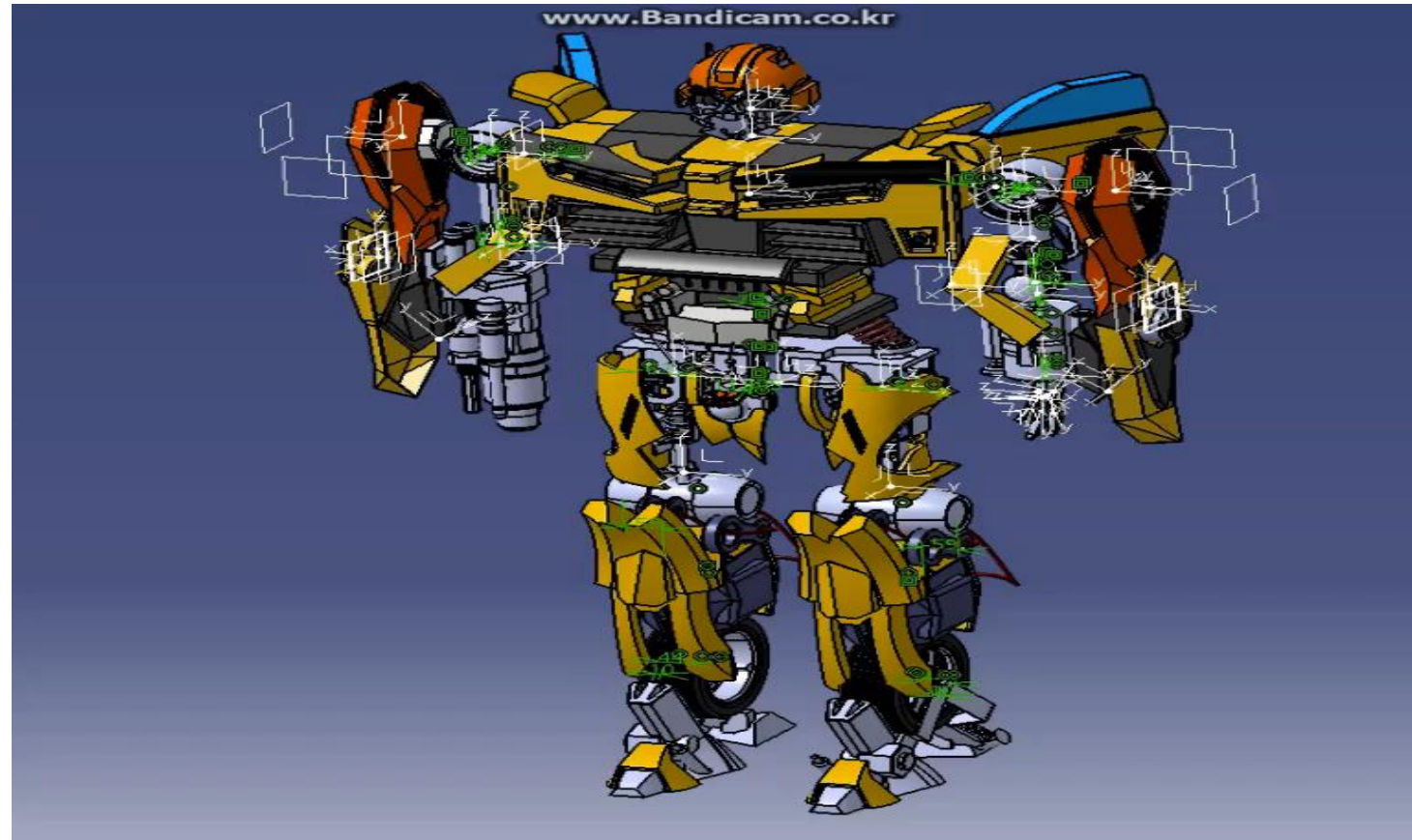
PART ASSEMBLY KINEMATIC



오른팔

3.1

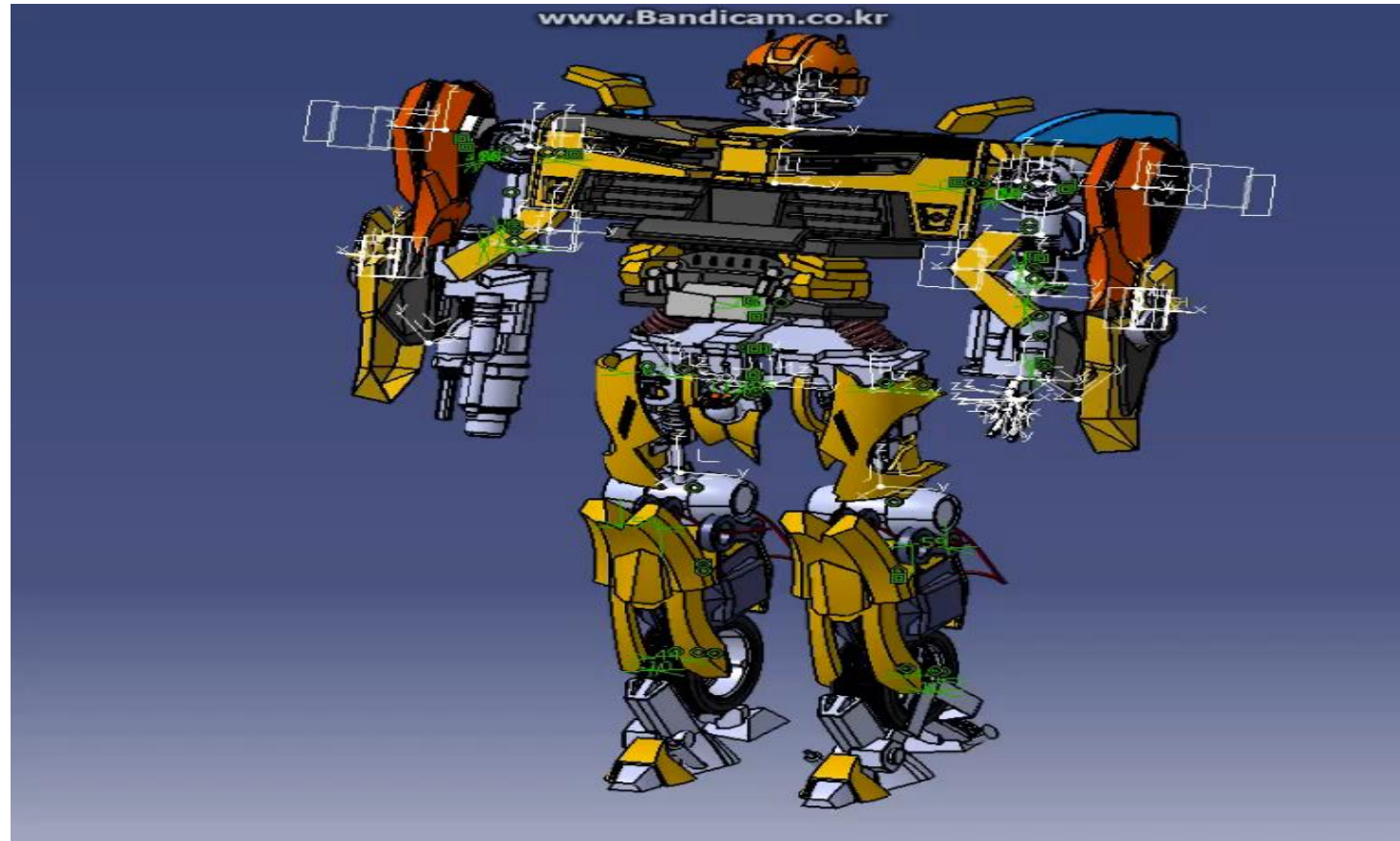
PART ASSEMBLY KINEMATIC



왼팔

3.1

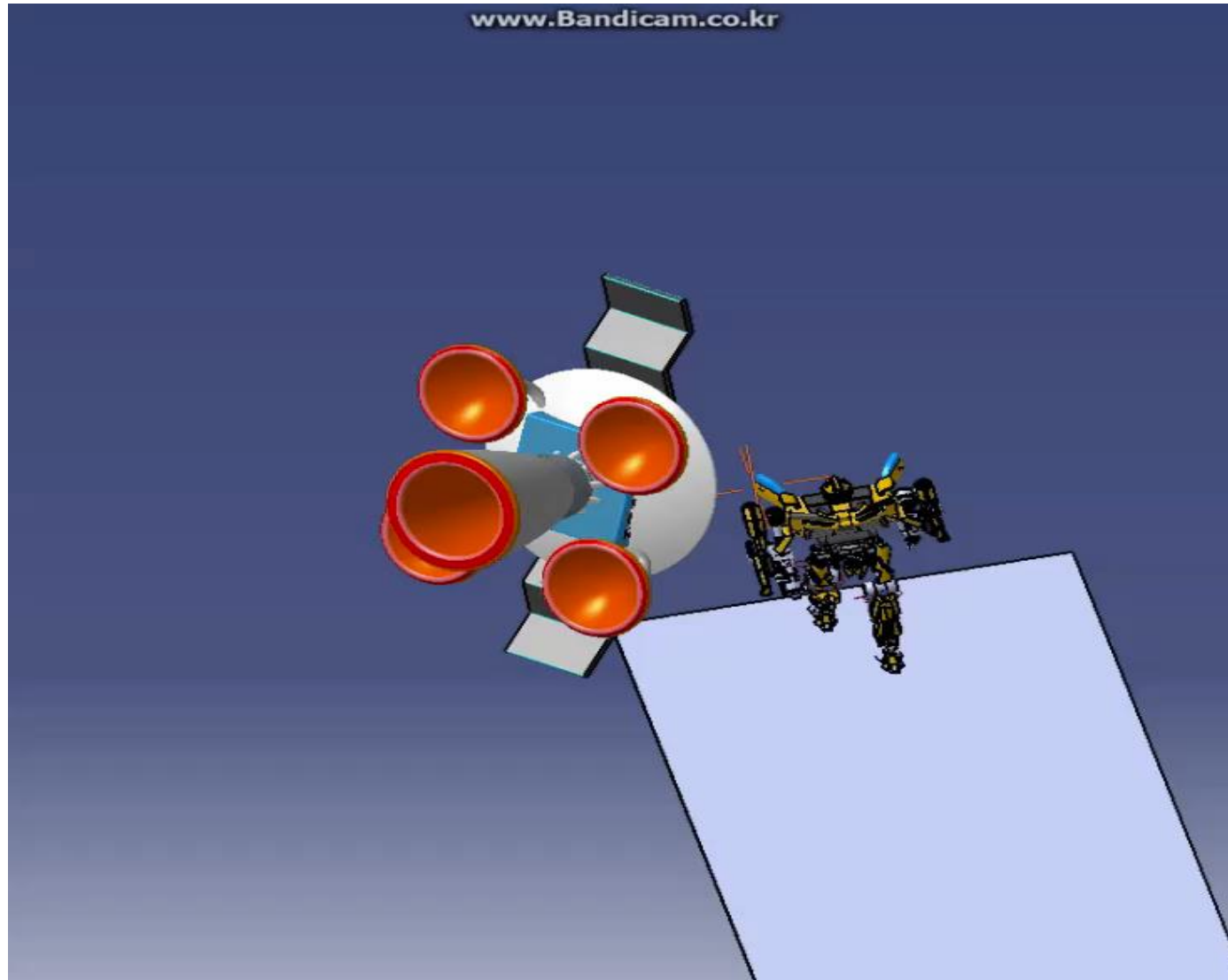
PART ASSEMBLY KINEMATIC



허리

3.1

PART ASSEMBLY KINEMATIC



4

CONCLUSION

4.1

FEEDBACK



단일화된 모델이 아닌 다양한 모델 존재

4.2

FEEDBACK

Assembly 과정 중 Affinity 적용 과정에서 비율이 안맞는 오류 발생

Gear를 활용한 System 구현에서의 미흡함

모든 물리법칙을 무시한 체 Kinetics가 아닌 Kinematics만 활용됨



***Thank you for listening,
Questions?***